Explanations of the Patent Claims

Claims 31, 33, 34, 37-43 and Claim 53 are cancelled.

Claims 28-30, 32, 35, 36 and 44-52 are amended and reasons given.

In the claims, insertions are underlined words and deletions are in **bold** typeface within square brackets **[ ]**.

The following explanations clarify the novelty, inventive steps and industrial applicability of this invention and claims. To avoid confusion in terminology such as "Data Identification Number", "Index Number", "PIN", "Card Identification Number" and "Account Number", here are the definitions of terms used in my application and the explanation:

Each Multi-Application Card (MAC) has a number. This is referred to in the claim as a "**data identification number**" and in explanations as a "**MAC identification number**". The MAC identification number is read from the MAC by a card reader device.

Each MAC corresponds to a record in a database. Each record in the database (whose key is the MAC Identification Number) contains sub-records; each sub-record is locatable by the MAC identification number and an **Index Number,** also referred to as a **Card Identification Number (CIN).** The Index Number, typically a 4-digit number, is physically entered at a data entry device such as a keypad.

Most credit and debit card users are familiar with the use of a **Personal Identification Number (PIN)**, which has served to identify the *owner* of a debit card. A PIN is also typically a 4-digit number, physically entered at a data entry device such as a keypad.

NOTE: Card industry research found that OVER 90% OF CARD OWNERS USE THE SAME PIN FOR ALL THEIR DEBIT, CHECK, ATM AND CONVENIENCE CARDS. This is logical because a PIN identifies the *person*, not the card. CREDIT CARDS ARE SIGNATURE-VERIFIED AND DO NOT USE PINS.

In my invention, each sub-record within the group referred to (in claims 28 and 50) as a "**first subset**" of index numbers identifies (or contains, or points to) a single **account number.** The account number could be a credit card number, a debit card number, driver's license number, etc. Each sub-record within the group referred to (in claims 29 and 51) as the "**second subset**" of index numbers contains (or points to) a **Lock code** instead of an account number. Each sub-record within the group referred to (in claims 30 and 52) as the "**third subset**" of index numbers contains (or points to) an **Unlock code,** instead of an account number or a Lock code.

Here are the steps involved in using my invention:

1. The multi-application card (MAC) is read at a card reader. The card reader reads the MAC identification number.

2. As when using a debit card, the user is asked to physically enter a number in the keypad. The user *manually* enters a number (called an Index Number or Card Identification Number), typically a 4-digit number.

3. The MAC Number and the Index Number are sent from the point-of-service to the card translator system. Using the MAC number, the translator locates a record in its database. The index number (or Card Identification Number) is used to find a sub-record (or entry) within the record. If, as the claim reads, the index number is within the *first* subset of index numbers (i.e. the sub-record identifies or contains *an* account number), *that* account number is retrieved and processing continues. The account number could be a credit card number, a debit card number or some other account number. If the index number is within the *second* subset of index numbers (i.e. the sub-record identifies or contains a Lock code instead of an account number), the entire record is flagged as "locked" or "disabled". *The MAC can no longer be used to access an account number from the database until the lock flag is removed.* If the index number is within the *third* subset of index numbers (i.e. the sub-record identifies or contains an Unlock code instead of an account number or Lock code), the Lock flag for the record is removed, effectively "unlocking" or "re-enabling" the MAC.

Re: US Patent 5,770,843 (ROSE et al.):

In contrast to my invention, here's how the ROSE system works:

1. The multi-application card (MAC) is swiped at a card reader. The card reader reads the MAC identification number. That's where the similarity ends.

2. The MAC number is sent to the remote system. It reads the record, searches all the sub-records (or entries) for account numbers in the record and displays ALL accounts on a screen for the user to select one.

3. With all accounts on the MAC displayed - before having to enter anything - the user chooses one of the accounts, e.g. a Bank of America (BofA) Debit card.

4. The system now asks for the PIN of the BofA Debit card. The user enters the PIN for the BofA Debit card at a data entry device.

5. The PIN is sent to the remote system. If the PIN (which can be the same for ALL the accounts) matches that of the BofA Debit card, the transaction is allowed to proceed.

Differences between ROSE and the current Invention:

Here are important differences between my invention and that of ROSE et al.:

1. ROSE uses PINs, which **(in over 90% of cases)** are found to be the same for all accounts of a card owner, while my invention uses Index Numbers **which must be unique for each account**, enforcing better security.

2. ROSE discloses to a potential thief ALL the accounts on a MAC record by merely swiping the MAC at a point-of-service terminal - even *before* the user is asked to enter anything. As a result, any user (including a thief) could never make a mistake in selecting an account - because ALL accounts are shown and the user selects from among them. If there are 5 accounts on the MAC, in the ROSE invention, only 5 accounts are displayed and the user has 5 possible choices. In my invention (assuming 4 digits are used for the Index/CIN), there are 10,000 possible numbers (0000 to 9999) that the user could enter. Of the 10,000 possible numbers, typically more than 99.9% would be incorrect. Only the owner would know what accounts are on the MAC and the *unique* Index Number pertaining to each account.
3. Credit cards do not use PINs. In the ROSE system, if the MAC database uses the *same* PIN as the card issuer, a thief with a Multi-Application Card could simply swipe the MAC and select a credit card - which has no PIN - to use it.
4. Let us assume the ROSE invention forces a PIN on all cards including credit cards. Again, the thief sees all the accounts on the MAC by merely swiping the MAC at a point-of-sale terminal. If the thief knows the PIN of any *one* card belonging to the MAC owner, inherent in the design and confirmed by industry statistics, the thief could almost certainly use *all* the accounts on the MAC. Ironically, the ROSE invention would *help* a thief by displaying all the card accounts on the MAC, by simply swiping it at a point of sale. My invention requires the user to enter the index/CIN of a valid card account *without displaying* what accounts are on the MAC. Even if the MAC owner uses the PIN of a card as its index/CIN, a thief with one PIN could access only *one* account on the MAC.
5. The ROSE invention requires multiple exchanges of messages between the card reader and the database to identify a specific account number. By using unique index numbers for each stored account, my invention requires just one exchange of messages to identify a specific account number. This is extremely important because even milliseconds matter when it comes to card authorization.
6. The ROSE invention was designed for a kiosk; it requires a device that can display all accounts on the record so that a user can select from among them. My invention does not require such a device; it can use a standard debit card keypad.
7. Changes in account numbers (whether in ROSE or my invention) would require a change to both databases - the card issuer database and the MAC database. However, in the ROSE invention - unless the MAC uses a different PIN from that in the card issuer database - a change in the PIN of any account would require a change in the database of the card issuer and also a change to the PIN in the MAC database. In my invention, changes to CINs and PINs are independent of each other. If the MAC owner changes the index number (or CIN) of an account, no change is required to the issuer database. If the MAC owner changes the PIN of a card, the only database needing the change is the issuer database. Since the MAC database in my invention does not use account PINs, no change is required to it.
8. **In the ROSE invention, it is NOT possible to *identify* an account number using the MAC Identification Number and the PIN because multiple accounts have the same PIN. In ROSE, the PIN is used to merely *confirm* a previously-selected (and already identified) account number. In my invention, the two data items, i.e. the MAC Identification Number and the Index, are sufficient to *identify* an individual account number.**
9. I believe use of the words "identify" and "single account number" in my claims differentiates this invention from ROSE. The Committee of 3 Examiners at the

European Patent Office (Euro. Pat. EP 1221144) acknowledges the difference and so does the Canadian Intellectual Property Office. The USPTO Examiner of this application also acknowledges the difference and is seeking rewording of the claims to reflect the difference. Therefore, as in my Canadian patent application (CA 2,381,807, for which I now have a Notice of Allowance on 21 claims), I have amended my claims to state that the data identification number and the index number identify "a *single* account number", clearly different from the teachings of ROSE and PIERCE. The phrase "chosen by an/the authorized holder of the card device" has been deleted from claims 28-30 and 50-52. I trust these amendments meet with your approval.

Differences between PIERCE and the current Invention:

Here are important differences between my invention and that of PIERCE:

1. PIERCE describes a system that re-directs data from the retailer subsystem to the appropriate card issuer subsystem. **The use of a card translator subsystem to translate (without additional input) an identification number and index number to a single account number is not in the teachings of either PIERCE or ROSE.**
2. The claims in this patent application point out, as shown in Figure 6 of the drawings, that a card translator (a subsystem to convert an identification number and index number to a single account number) may be located in, or connected to, a client/retailer subsystem, an issuer subsystem or an intermediate subsystem usually referred to in the industry as a card processor.
3. As stated earlier, I believe using the words "identify" and "single account number" in my claims differentiates this invention from ROSE and PIERCE. I have amended my claims to state that the data identification number and the index number identify a *single* account number, clearly different from the teachings of ROSE and PIERCE. The phrase "chosen by an/the authorized holder of the card device" has been deleted from claims 28-30 and 50-52. I trust these amendments meet with your approval.